

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

**REMARKS**

Applicant respectfully thanks the Examiner for the consideration provided to this application, and respectfully requests reconsideration of this application.

Each of claims 1, 13, 14, 22, and 32 has been amended for at least one reason unrelated to patentability, including at least one of: to explicitly present one or more elements, limitations, phrases, terms and/or words implicit in the claim as originally written when viewed in light of the specification, thereby not narrowing the scope of the claim; to detect infringement more easily; to enlarge the scope of infringement; to cover different kinds of infringement (direct, indirect, contributory, induced, and/or importation, etc.); to expedite the issuance of a claim of particular current licensing interest; to target the claim to a party currently interested in licensing certain embodiments; to enlarge the royalty base of the claim; to cover a particular product or person in the marketplace; and/or to target the claim to a particular industry.

Claims 1-32 are now pending in this application. Each of claims 1, 14, 22, and 32 is in independent form.

**I. The Indefiniteness Rejections**

Each of claims 1-32 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite, and thus was asserted to be unpatentable. These rejections are respectfully traversed.

Regarding indefiniteness rejections, the Federal Circuit has held that the law is clear that **if the claims, read in light of the specification, reasonably apprise those skilled in the art of the use and scope of the invention**, and if the language is as precise as the subject matter permits, the claims are definite under Section 112, second paragraph. *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624, 225 USPQ 634 (Fed. Cir. 1985), *cert. dismissed*, 474 U.S. 976 (1985).

The MPEP states that where "a claim is refused for any reason relating to the merits thereof it should be 'rejected' and the ground of rejection fully and clearly stated." See MPEP 707.07(d).

The present Office Action alleges, at Page 3:

[a]s to claims 1, 14, 22, and 32, 'said soft programmable logic controller (PLC)

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

comprised by a single computer' is indefinite. How can software comprises hardware, Is the soft PLC executing on the single computer? The specification defines soft PLC, while claimed as virtual PLC.

As an initial matter, Applicant respectfully traverses this rejection for failure to comply with MPEP 707.07(d) since these allegations are unintelligible. The present Office Action appears to allege that Applicant claims a "virtual PLC", yet the phrase "virtual PLC" does not appear anywhere in the present application and specifically does not appear in any of claims 1-32.

Applicant further traverses these allegations since they appear to mischaracterize the claimed subject matter as "software comprises hardware".

Applicant respectfully submits that the present application, at least implicitly, defines the claim phrase "soft PLC" as claimed by each of claims 1-32. The present application states, at paragraph 0006 of U.S. Patent Publication 20040117535, "[a] Soft PLC is a software version of the Hard PLC. Instead of having actual circuitry boards that execute the control program, a software program that runs on the PC executes the program."

Applicant respectfully submits that no evidence has been presented that any of claims 1, 14, 22, and 32, when "read in light of the specification," do not "reasonably apprise those skilled in the art of the use and scope of the invention." Thus, no *prima facie* case has been made that claims 1-32 are indefinite. For at least this reason, Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 1-32.

## **II. The Obviousness Rejections**

Each of claims 1-32 was rejected under 35 U.S.C. 103(a) as being obvious, and thus unpatentable, over various combinations of U.S. Patent 6,996,828 ("Kimura"), a publication "Real-time Systems" pages 291-313 ("Halang"), U.S. Patent 5,748,468 ("Notenboom"), U.S. Patent 6,725,260 ("Philyaw"), and/or U.S. Patent 2003/0041088 ("Wilson"). Each of these rejections is respectfully traversed.

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

**A. Legal Standards**

**1. *Prima Facie* Criteria for an Obviousness Rejection**

In *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), the Supreme Court established factors regarding the factual inquiry required to establish obviousness. The factors include:

1. determining the scope and contents of the prior art;
2. ascertaining differences between the prior art and the claims at issue;
3. resolving the level of ordinary skill in the pertinent art; and
4. considering objective evidence indicating obviousness or nonobviousness.

The Federal Circuit has applied *Graham*'s required factual inquiry in numerous legal precedents that are binding on the USPTO.

It is recognized that most patentable inventions arise from a combination of old elements and often, each element is found in the prior art. In *re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). In *KSR International Co. v. Teleflex Inc.*, 2007 U.S. LEXIS 4745 (2007), the United States Supreme Court clarified that:

1. "[t]he question is not whether the combination was obvious to the patentee but whether the combination was obvious to a person with ordinary skill in the art";
2. "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art";
3. it is necessary "to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit"; and
4. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" (quoting *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006).

To establish a *prima facie* case of obviousness, certain criteria must be met. Evidence must be provided that indicates that the combination was obvious to a person with ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 2007 U.S. LEXIS 4745 (2007); *In re Vaeck*,

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). That evidence must include an apparent reason, with a rational underpinning, to combine the known elements in the fashion claimed in the patent at issue. *KSR International Co. v. Teleflex Inc.*, 2007 U.S. LEXIS 4745 (2007). There must be a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2143. In addition, the prior art reference (or references when combined) must teach... all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2143.

Moreover, the "Patent Office has the initial duty of supplying the factual basis for its rejection." *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057, *reh'g denied*, 390 U.S. 1000 (1968). "It may not... resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis". *Id.*

It is legal error to "substitute[] supposed *per se* rules for the particularized inquiry required by section 103. It necessarily produces erroneous results." See, *In re Ochiai*, 71 F.3d 1565, 1571, 37 USPQ2d 1127, 1132-33 (Fed. Cir. 1998); *In re Wright*, 343 F.2d 761, 769-770, 145 USPQ 182, 190 (CCPA 1965).

"Once the examiner... carries the burden of making out a *prima facie* case of unpatentability, 'the burden of coming forward with evidence or argument shifts to the applicant.'" *In re Alton*, 76 F.3d 1168, 37 USPQ2d 1578 (Fed. Cir. 1996) (quoting *In re Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444).

## 2. All Words in a Claim Must Be Considered

"To establish *prima facie* obviousness..., '[a]ll words in a claim must be considered'". MPEP 2143.03, quoting *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970); see also, *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); *In re Wilder*, 429 F.2d 447, 166 USPQ 545, 548 (CCPA 1970); *In re Angstadt*, 537 F.2d 498, 190 USPQ 214, 217 (CCPA 1976); *In re Geerdes*, 491 F.2d 1260, 180 USPQ 789, 791 (CCPA 1974).

## 3. Unfounded Assertions of Knowledge

Deficiencies of the cited references can not be remedied by general conclusions about what is basic knowledge or common sense to one of ordinary skill in the art. *In re Zurko*, 258

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

F.3d 1379, 1385-86 (Fed. Cir. 2001). An assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* That is, such unfounded assertions are not permissible substitutes for evidence. *See, In re Lee*, 277 F.3d 1338, 1435, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002).

#### **4. Lack of Evidence of Reasons for Combining References**

Under the *Graham* analysis, the “examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP 2142. The requirements for meeting this burden are clear.

To factually support a *prima facie* conclusion of obviousness, an Office Action must provide evidence that indicates that the combination was obvious to a person with ordinary skill in the art. The evidence must include an apparent reason, with a rational underpinning, to combine the known elements in the fashion claimed in the patent at issue. “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” *KSR International Co. v. Teleflex Inc.*, 2007 U.S. LEXIS 4745 (2007) (*quoting In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006)).

#### **5. Next Office Action**

If an Office Action fails to set forth sufficient facts to provide a *prima facie* basis for the rejections, any future rejection based on the applied reference will necessarily be factually based on an entirely different portion of that reference, and thus will be legally defined as a “new grounds of rejection.” Consequently, any Office Action containing such rejection can not properly be made final. *See, In re Wiechert*, 152 USPQ 247, 251-52 (CCPA 1967) (defining “new ground of rejection” and requiring that “when a rejection is factually based on an entirely different portion of an existing reference the appellant should be afforded an opportunity to make a showing of unobviousness vis-a-vis such portion of the reference”), and *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 178 (CCPA 1967) (the USPTO “has the initial duty of supplying the factual basis for its rejection”).

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

**B. Analysis**

**a. *Prima Facie* Criteria**

None of the applied portions of the references relied upon in the Office Action, whether considered alone or in combination, establishes a *prima facie* case of obviousness.

**b. Missing Claim Limitations**

Each of independent claims 1, 22, and 32 states, *inter alia*, yet no substantial evidence has been presented that the applied portions of the relied-upon references, alone or in combination, teach, “an interrupt line of the reassigned resource **shared in the second operating system with at least one real-time card**”.

Claim 14 states, *inter alia*, yet no substantial evidence has been presented that the applied portions of the relied-upon references, alone or in combination, teach, “an interrupt line of the assigned resource **shared in the second operating system with at least one real-time card**”.

The present Office Action appears to not consider all words of each of independent claims 1, 14, 22, and 32. Instead, regarding claim 1, the present Office Action states at Page 4, “Kimura teaches” “and interrupt line of the reassigned resource (figure 14 and associated text)”. This grounds of rejection is referenced as a basis for rejecting each of independent claims 14, 22, and 32 as well.

The present Office Action fails to allege that any applied portion of any relied upon reference teaches, “an interrupt line of the reassigned resource shared in the second operating system with at least one real-time card” as claimed by each of claims 1, 22, and 32. The present Office Action fails to allege that any applied portion of any relied upon reference teaches, “an interrupt line of the assigned resource shared in the second operating system with at least one real-time card” as claimed by each of claims 14.

Thus, even if there were proper evidence of obviousness presented in the Office Action (an assumption that is respectfully traversed), and even if there were a reasonable expectation of success in combining or modifying the applied portions of the references relied upon in the Office Action (another assumption that is respectfully traversed), no substantial evidence has been presented the applied portions of the references relied upon in the Office Action, as **attempted to be modified and/or combined**, expressly or inherently teach every limitation of

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

the independent claims, and consequently the Office Action fails to establish a *prima facie* case of obviousness. Consequently, for at least the reasons mentioned above, reconsideration and withdrawal of these rejections is respectfully requested.

**c. Lack of Required Factual Evidence of Obviousness**

Applicant respectfully notes that the present Office Action fails to evidence the scope and contents of the prior art as required under *Graham*. The present Office Action fails to even identify what "the pertinent art" is. Moreover, the present Office Action fails to evidence the level of ordinary skill in the pertinent art.

Applicant respectfully traverses the failure of the present Office Action to comply with the requirements of *Graham* and thereby, to provide a *prima facie* rejection under 35 U.S.C. 103

**d. Lack of Evidence of a Reason to Combine References**

The present Office Action fails to provide evidence of obviousness as required under *KSR*. For example, regarding the proffered combinations of the applied portions of the relied-upon references, no evidence is provided whatsoever regarding why one having ordinary skill in the art would combine the applied portions of the relied-upon references, that are used in rejecting each of claims 1-32, in such a manner so as to arrive at the claimed subject matter of claim 1-32. Regarding the proffered combinations, the present Office Action states:

- i. regarding claim 1, at Pages 4-5, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Kimura and Halang's system because the the main memory of PLC is divided into specialized segments being used as operating system would designate for different purposes (page 297)";
- ii. regarding claim 1, at Page 5, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Kimura, Halang, and Notenboom's system because the card would provide connectors for coupling to the devices for installation process";
- iii. regarding claims 2-5, at Page 9, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of

**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

Kimura and Philyaw's system because the Philyaw's real-time mode would let the system immediately upgrade the driver for hardware components when resources changed, and Philyaw's system also teaches configuring and installing network component (title)"; and

- iv. regarding claims 2-5, at Page 9, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kimura, Halang, and Wilson's system because the registry can contains and recognizes all devices components for the system";

Applicant respectfully submits that each of these assertions appears to be unintelligible and do not appear to provide substantial evidence of, from the perspective of one of ordinary skill in the art, a "rational underpinning, to combine the known elements in the fashion claimed in the patent at issue". Moreover, no evidence is presented that this unsupported assertion was "known in the prior art", as required by *KSR*. Applicant reiterates that under *KSR* "rejections on obviousness grounds cannot be sustained by mere conclusory statements".

**e. Lack of Evidence of a Reason to Combine References**

For at least these reasons, reconsideration and withdrawal of each rejection of each of claims 1-32 is respectfully requested.



**PATENT**  
**Application 10/667,060**  
**Attorney Docket 2002P15893US01 (1009-175)**

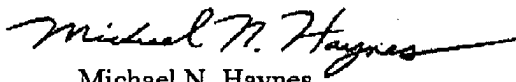
**CONCLUSION**

It is respectfully submitted that the application is in clear condition for allowance. Reconsideration, withdrawal of all grounds of rejection, and issuance of a Notice of Allowance are earnestly solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. 1.16 or 1.17 to Deposit Account 50-2504. The Examiner is invited to contact the undersigned at 434-972-9988 to discuss any matter regarding this application.

Respectfully submitted,

Michael Haynes PLC



Michael N. Haynes

Registration 40,014

Date: 01 February 2008

1341 Huntersfield Close  
Keswick, VA 22947  
Telephone: 434-972-9988  
Facsimile: 815-550-8850